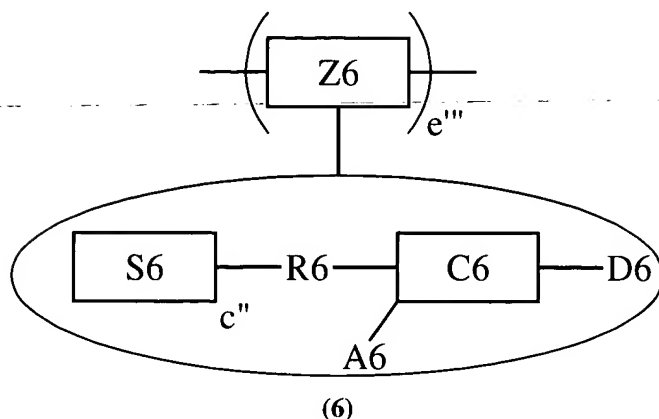


WE CLAIM:

1. A compound having formula (6)



wherein:

- D6 is an electron donor moiety;
- C6 is a conjugated bridging moiety;
- A6 is an electron acceptor moiety;
- R6 is a spacer moiety;
- S6 is a hydrocarbon, a heterocyclic moiety, or a hetero-acyclic moiety;
- c' is an integer;
- Z6 is a polymerizable moiety; and
- e''' is the degree of polymerization.

2. The compound of claim 1, wherein D6 is selected from the group consisting of:

- (a) an atom selected from the group consisting of N, O, S, P, Cl, Br, and I where the valence of the atom is satisfied by bonding with C6 and optionally with Z6;
- (b) an atom selected from the group consisting of N, O, S, and P bonded to C6, and optionally with Z6, where the atom also is bonded to at least one other moiety to satisfy the valence of the atom;
- (c) ferrocenyl;
- (d) azulenyl; and
- (e) at least one aromatic heterocyclic ring.

3. The compound of claim 1, wherein C6 is selected from the group consisting of:

- (a) at least one aromatic ring;
- (b) at least one aromatic ring conjugated through one or more ethenyl or ethynyl bonds;
- and
- (c) fused aromatic rings.

4. The compound of claim 1, wherein A6 is selected from the group consisting of:

- (a) an aldehyde;
- (b) a ketone;
- (c) an ester;
- (d) a carboxylic acid;
- (e) cyano;
- (f) nitro;
- (g) nitroso;
- (h) a sulfur-based group;
- (i) a fluorine atom;
- (j) an alkene; and
- (k) a boron atom.

5. The compound of claim 1, wherein R6 is selected from the group consisting of:

- (a) a direct bond;
- (b) an oxygen atom;
- (c) a sulfur containing moiety;
- (d) a glycol ether unit having a formula $-(O-CH_2-CH_2)_n-O-$ where n is an integer; and
- (e) a nitrogen containing moiety.

6. The compound of claim 1, wherein the hydrocarbon of S6 is selected from the group consisting of:

- (a) a straight chain alkyl group;
- (b) a branched alkyl group;
- (c) at least one cycloalkyl group, optionally substituted with an alkyl group, an arylalkyl group, an alkylaryl group, a cycloalkyl group, or an alkylcycloalkyl group; and

(d) an arylalkyl group or an alkylaryl group.

7. The compound of claim 1, wherein S6 includes a liquid crystal moiety.

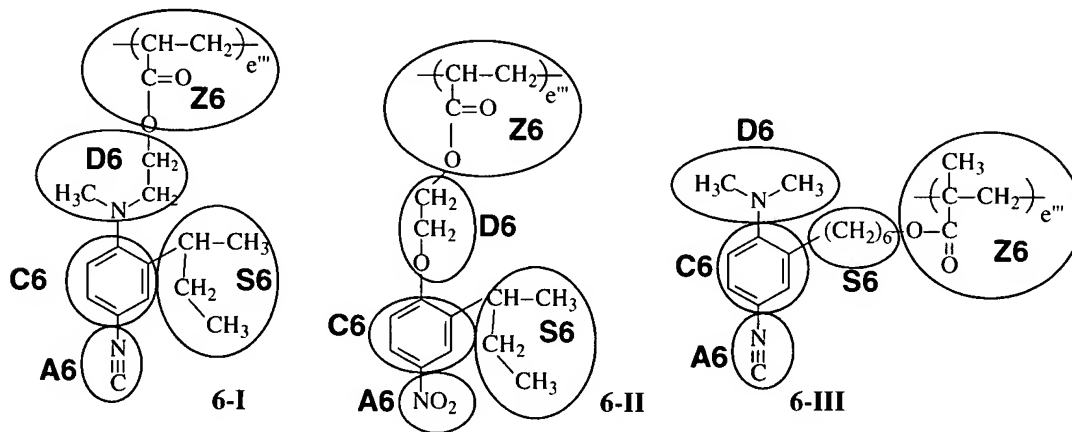
8. The compound of claim 1, wherein Z6 is selected from the group consisting of:

$\text{H}_2\text{C}=\text{CH}-\text{C}(\text{O})-\text{O}-$ (acryl),
 $\text{H}_2\text{C}=\text{C}(\text{CH}_3)-\text{C}(\text{O})-\text{O}-$ (methacryl),
 $\text{H}_2\text{C}=\text{C}(\text{C}_2\text{H}_5)-\text{C}(\text{O})\text{O}-$ (ethacryl),
 $-\text{CH}=\text{CH}_2$ (vinyl), and
 $-\text{C}(\text{CH}_3)=\text{CH}_2$.

9. The compound of claim 1, wherein Z6 includes a substitution with a moiety selected from the group consisting of:

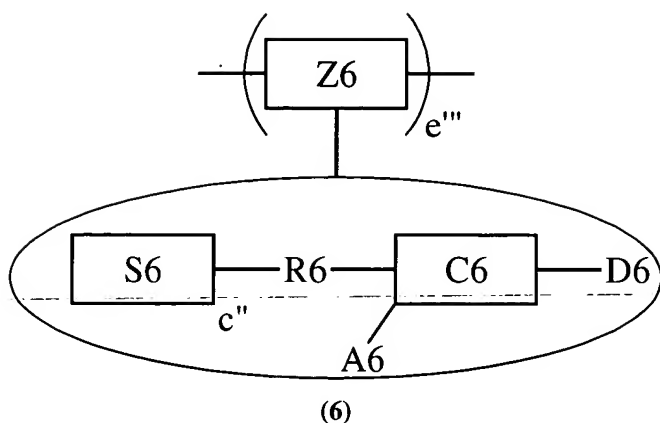
- (a) an alkyl chain; and
- (b) a substituted alkyl chain selected from the group consisting of: an alkoxy, a halide substituted alkyl group, and an amino-alkyl group.

10. The compound of claim 1, wherein the compound of formula (6) is selected from the group consisting of:



wherein D6, C6, A6, R6, S6, and Z6 are indicated.

11. A composition comprised of a liquid crystal and a compound having formula (6)



wherein:

- D6 is an electron donor moiety;
- C6 is a conjugated bridging moiety;
- A6 is an electron acceptor moiety;
- R6 is a spacer moiety;
- S6 is a liquid crystal compatibilizing moiety;
- c' is an integer;
- Z6 is a polymerizable moiety; and
- e''' is the degree of polymerization.

12. The composition of claim 11, wherein D6 is selected from the group consisting of:

- (a) an atom selected from the group consisting of N, O, S, P, Cl, Br, and I where the valence of the atom is satisfied by bonding with C6 and optionally with Z6;
- (b) an atom selected from the group consisting of N, O, S, and P bonded to C6, and optionally with Z6, where the atom also is bonded to at least one other moiety to satisfy the valence of the atom;
- (c) ferrocenyl;
- (d) azulenyl; and
- (e) at least one aromatic heterocyclic ring.

13. The composition of claim 11, wherein C6 is selected from the group consisting of:

- (a) at least one aromatic ring;
 - (b) at least one aromatic ring conjugated through one or more ethenyl or ethynyl bonds;
- and

(c) fused aromatic rings.

14. The composition of claim 11, wherein A6 is selected from the group consisting of:

- (a) an aldehyde;
- (b) a ketone;
- (c) an ester;
- (d) a carboxylic acid;
- (e) cyano;
- (f) nitro;
- (g) nitroso;
- (h) a sulfur-based group;
- (i) a fluorine atom;
- (j) an alkene; and
- (k) a boron atom.

15. The composition of claim 11, wherein R6 is selected from the group consisting of:

- (a) a direct bond;
- (b) an oxygen atom;
- (c) a sulfur containing moiety;
- (d) a glycol ether unit having a formula $-(O-CH_2-CH_2)_n-O-$ where n is an integer; and
- (e) a nitrogen containing moiety.

16. The composition of claim 11, wherein S6 is a hydrocarbon selected from the group consisting of:

- (a) a straight chain alkyl group;
- (b) a branched alkyl group;
- (c) at least one cycloalkyl group, optionally substituted with an alkyl group, an arylalkyl group, an alkylaryl group, a cycloalkyl group, or an alkylcycloalkyl group; and
- (d) an arylalkyl group or an alkylaryl group.

17. The composition of claim 11, wherein S6 includes a liquid crystal moiety.

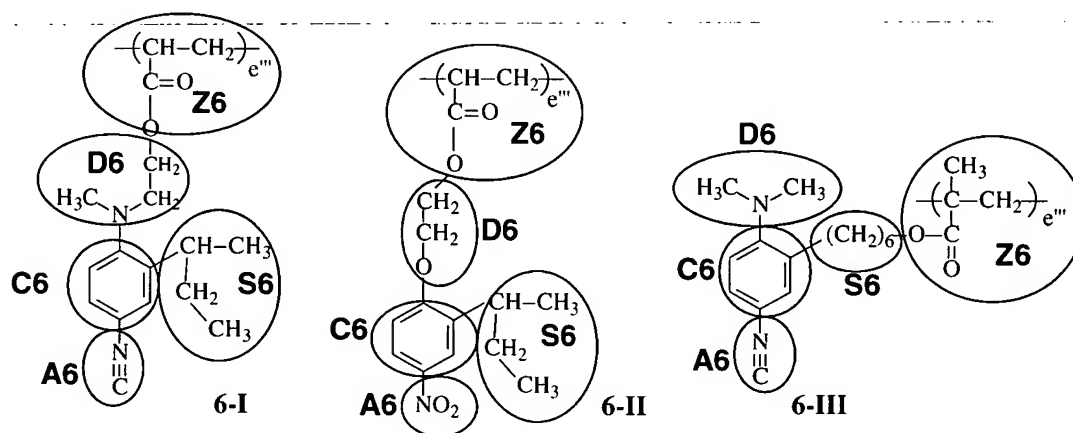
18. The composition of claim 11, wherein Z6 is selected from the group consisting of:

- $\text{H}_2\text{C}=\text{CH}-\text{C}(\text{O})-\text{O}-$ (acryl),
- $\text{H}_2\text{C}=\text{C}(\text{CH}_3)-\text{C}(\text{O})-\text{O}-$ (methacryl),
- $\text{H}_2\text{C}=\text{C}(\text{C}_2\text{H}_5)-\text{C}(\text{O})\text{O}-$ (ethacryl),
- $-\text{CH}=\text{CH}_2$ (vinyl), and
- $-\text{C}(\text{CH}_3)=\text{CH}_2$.

19. The composition of claim 11, wherein Z6 includes a substitution with a moiety selected from the group consisting of:

- (a) an alkyl chain; and
- (b) a substituted alkyl chain selected from the group consisting of: an alkoxy, a halide substituted alkyl group, and an amino-alkyl group.

20. The composition of claim 11, wherein the compound of formula (6) is selected from the group consisting of:



wherein D6, C6, A6, R6, S6, and Z6 are indicated.